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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,381	10/16/2003	Robert Lee Barcus	9388	2125

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EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/687,381	Applicant(s) BARCUS ET AL.	
	Examiner Dennis Cordray	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/5/2003, 4/28/20.</u> | 6) <input type="checkbox"/> Other: ____.  |

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### **DETAILED ACTION**

This is a first action on the merits of Application SN 10/687,381.

#### ***Claim Objections***

1. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The aliphatic group  $R_2$  is defined in claim 6 as having from 2-4 carbon atoms, whereas some of the species listed in claim 7 have corresponding aliphatic groups with more than 4 carbon atoms, thus the species broaden rather than limit claim 6.
2. The species "methyl 2-hydroxymethyl acrylate" and "ethyl 2-(hydroxymethyl)acrylate" do not fit the structure as defined in claims 1, 2 and 6 as the group  $Y_3$  in claim 1 would have to be  $CH_2OH$  to include the claimed species.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7-9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The chemical species listed in the claims are not the structures as defined in claims 1, 2 and 6, upon which they are dependent, but are

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monomers containing the structures. Based on the description on pages 7-11 of the specification, the claims will be interpreted for the purposes of this examination to refer to the monomeric units used to make the claimed resin.

### ***Claim Rejections - 35 USC § 102***

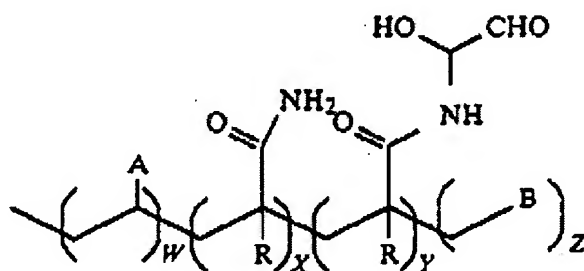
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 8, 10-13, and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bjorkquist et al (4603176).

Claims 1, 2, 4 and 6: Bjorkquist et al discloses a wet strength resin with the following structure (abstract)



wherein A is a polar, non-nucleophilic unit; B is a hydrophilic, cationic unit; each R is H, C<sub>1</sub> -C<sub>4</sub> alkyl or halogen; and W, X, Y and Z represent the mole percents of their respective monomeric units. The ranges are as follows:

W - about 5 to about 95 mole %

X - about 3 to about 65 mole %

Y - about 1 to about 20 mole %

Z - about 1 to about 10 mole %

In the above structure, if R = H, CH<sub>3</sub>, or a halogen, then sidegroup A corresponds to sidegroup W in the instant invention; sidegroup B corresponds to sidegroup Q in the

instant invention; and the sidegroup  $\begin{array}{c} \text{O} \\ \parallel \\ -\text{C}-\text{NH}-\text{CH} \begin{array}{l} \nearrow \text{OH} \\ \searrow \text{CHO} \end{array} \end{array}$  corresponds to both

sidegroups A and Z in the instant invention (when, in claim 2, X = NH and, R<sub>1</sub> = CHOH, R<sub>2</sub> = CHCHO). Subscripts W and Z in the above structure correspond to subscripts b and d in the instant invention respectively. Subscript Y in the above structure corresponds to subscripts a and c in the instant invention.

The composition range defined by W, Y and Z in the above structure significantly overlaps and thus anticipates the claimed range.

Claim 3: Bjorkquist et al discloses that the temporary wet strength resin has a molecular weight between about 5,000 and 200,000, which significantly overlaps the claimed molecular weight (abstract).

Claim 8: Bjorkquist et al discloses examples where the non-nucleophilic monomer unit is N-vinyl pyrrolidone or N,N-dimethyl acrylamide (col 10, lines 17-18, Example I and col 11, line 29, Example IV).

Claims 10-12: Bjorkquist et al discloses examples of fibrous structures comprising the claimed temporary wet strength resin described above (cols 11-15, Examples IV-VII). Bjorkquist et al further discloses that the wet strength resin can be

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added in an amount from about 0.005% to about 2% of the weight of the fibers (col 9, lines 66-68; col 10, line 1).

Claim 13, 15 and 16: Bjorkquist et al discloses a process for making a three-layered tissue paper comprising a) providing a fiber furnish, b) forming an embryonic web on a wire, c) drying the embryonic web, and d) adding the temporary wet strength resin as described above to the furnish. Bjorkquist et al also discloses a tissue paper made using the temporary wet strength resin sheet (col 15, lines 24-68, Example VIII).

Claim 17: Bjorkquist et al discloses a method for making the temporary wet strength resin comprising providing monomeric units as described above and polymerizing them (col 5, line 68 and col 6, lines 1-35).

Claim 18: Bjorkquist et al discloses several examples of fibrous structures comprising the temporary wet strength resin described above that have the Wet Tensile Loss properties and wet tensile strength/dry tensile strength ratio claimed (cols 13-15, Examples V-VII).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bjorkquist et al (4603176) in view of Bjorkquist (4981557).

Bjorkquist et al ('176) discloses that the rate of tensile decay is increased if the relative proportion of amidol (homo-crosslinking) to hemiacetal (co-crosslinking) bonds is decreased. Bjorkquist et al also discloses that the hemiacetal bonds result from the reaction of the cellulose hydroxyl groups with the aldehyde functionality of the resin polymer (col 4, lines 26-46). Bjorkquist et al does not disclose adding a monomer unit with only aldehyde functionality.

Bjorkquist ('557) discloses a temporary wet strength resin made from monomers containing only aldehyde functionality (similar to group A of the instant invention) and no hydroxyl functionality, as well as non-nucleophilic and cationic monomers (abstract). Bjorkquist also discloses suitable monomers as including acrolein, methacrolein, 3,3-dimethoxypropyl acrylamide, 3,3 diethoxypropyl acrylamide, 3,3-dimethoxypropyl methacrylamide, 2,2 dimethoxy- 1 -methylethyl acrylate, 5-(acryloylamino)pentanal dimethylacetal, 8-(acryloylamino)octanal dimethylacetal, 3-(N-acryloyl-N-methylamino)propanal dimethylacetal, 3,3-dimethoxypropyl methacrylate, and 2-(acryloylamino)ethanal dimethylacetal (col 6, lines 16-26).

The art of Bjorkquist et al ('176), Bjorkquist ('557) and the instant invention are analogous as they pertain to the art of making water dispersable resins. It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the monomers of Bjorkquist ('557) having only aldehyde functionality into the resin of Bjorkquist et al ('176) in view of Bjorkquist ('557) in order to increase the rate of tensile decay of a tissue product incorporating the resin.

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6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bjorkquist et al (4603176) in view of Steinwand (5039764).

Bjorkquist et al ('176) does not disclose a surgical garment made using the temporary wet strength resin.

Steinwand teaches that wet strength resins are used in nonwoven disposable items such as surgical packs and gowns because they impart high strength to the products (col 1, lines 17-24).

The art of Bjorkquist et al, Steinwand and the instant invention are analogous because they pertain to the art of making and using wet strength resins. It would have been obvious to one having ordinary skill in the art at the time of the invention to make surgical garments incorporating the wet strength resin of Bjorkquist et al ('176) in view of Steinwand ('557) in order to increase the strength of the garments.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bjorkquist et al (4603176) in view of Kekish et al (3317370).

Bjorkquist et al ('176) does not disclose the use of separate aldehyde containing and hydroxyl containing sidegroups.

Kekish et al discloses a wet strength resin having separate aldehyde containing and hydroxyl containing sidegroups (col 3, lines 60-66 and col 6, lines 28-29, 43-49).

The art of Bjorkquist et al, Kekish et al and the instant invention are analogous because they pertain to the art of making and using wet strength resins. It would have been obvious to one having ordinary skill in the art at the time of the invention to



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incorporate separate aldehyde containing and hydroxyl containing monomers into the wet strength resin of Bjorqkquist et al in view of Kekish et al as old and well known art.

### **Conclusion**

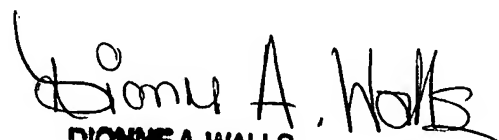
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure [Deets et al (4684708), Dauplaise et al (5723022), Crisp et al (6107919)]. They disclose other wet strength resins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DRC

  
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PRIMARY EXAMINER